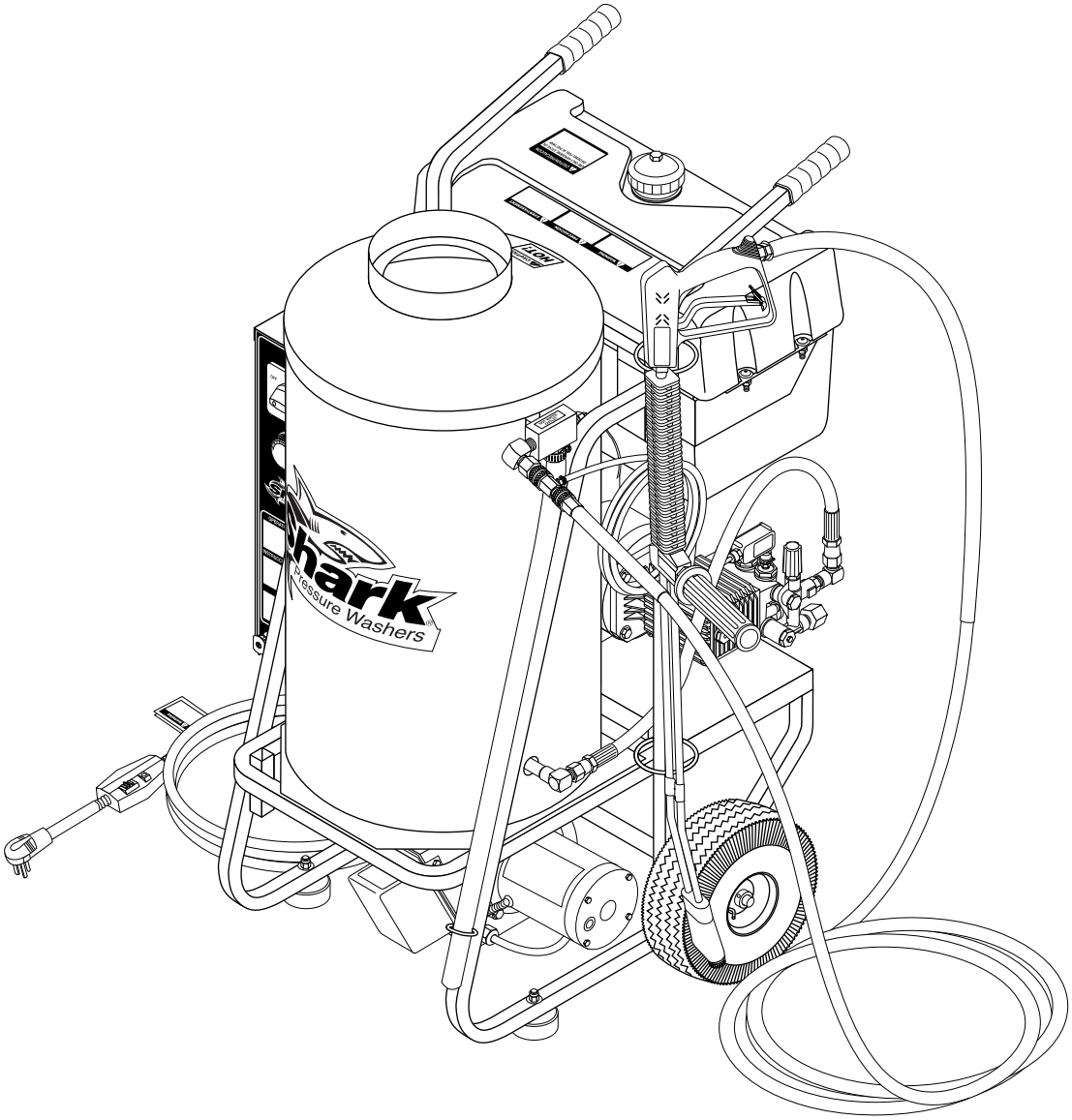
MODEL: HPB

OPERATING INSTRUCTION AND PARTS MANUAL

■ **HPB-2011** ■ **HPB-3520** ■ **HPB-4020**



SHARK PRESSURE WASHERS ■ 4275 N.W. Pacific Rim Blvd. ■ Camas, WA 98607 ■ USA

For technical assistance or the Shark Dealer nearest you, call 1-800-771-1881.

MACHINE SPECIFICATIONS

- **Pump Volume At Pump Head:**
  - **HPB-2011** 2.0 GPM
  - **HPB-3520** 3.5 GPM
  - **HPB-4020** 4.2 GPM

- **Pump Pressure At Pump Head:**
  - **HPB-2011** 1000 PSI
  - **HPB-3520** 2000 PSI
  - **HPB-4020** 2000 PSI

- **Machine Voltage:**
  - **HPB-2011** 120V/1PH
  - **HPB-3520** 230V/1PH
  - **HPB-4020** 230V/1PH

- **Total Machine Amperage:**
  - **HPB-2011** 15 Amps
  - **HPB-3520** 22 Amps
  - **HPB-4020** 29 Amps

- **Shipping Weight:**
  - **HPB-2011** 300 Lbs.
  - **HPB-3520** 340 Lbs.
  - **HPB-4020** 515 Lbs.

- **Machine Dimensions:**

HPB-2011	Length = 31"	Width = 23"	Height = 40"
HPB-3520	Length = 28"	Width = 28"	Height = 43"
HPB-4020	Length = 41"	Width = 32"	Height = 44"

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SERIAL NUMBER:

DATE PURCHASED:

FOR SALES AND SERVICE, PLEASE CONTACT:

INTRODUCTION

Thank you for purchasing a HPB.

This manual covers the operation and maintenance of the HPB-201101D, 201107D Mini Series, HPB-352001A, 352007A Junior Series and HPB-402001A, 402007A Senior Series pressure washers. All information in this manual is based on the latest product information available at the time of printing.

We reserve the right to make changes at any time without incurring any obligation.

Owner/User Responsibility:

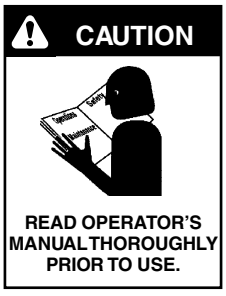
The owner and/or user must have an understanding of the manufacturer's operating instructions and warnings before using this pressure washer. Warning information should be emphasized and understood. If the operator is not fluent in English, the manufacturer's instructions and warnings shall be read to and discussed with the operator in the operator's native language by the purchaser/owner, making sure that the operator comprehends its contents.

Owner and/or user must study and maintain for future reference the manufacturers' instructions.

This manual should be considered a permanent part of the machine and should remain with it if machine is resold.

When ordering parts, please specify model and serial number.

IMPORTANT SAFETY INFORMATION



CAUTION: To reduce the risk of injury, read operating instructions carefully before using.

1. Read the owner's manual thoroughly. Failure to follow instructions could cause malfunction of the machine and result in death, serious bodily injury and/or property damage.
2. All installations must comply with local codes. Contact your electrician, plumber, utility company or the selling distributor for specific details.

   To comply with National Electrical Code (NGPA 70) and provide additional protection from risk of electric shock, this hot water converter is equipped with a UL approved ground fault circuit interrupter (GFCI) power cord.

WARNING: Flammable liquids can create fumes which can ignite causing property damage or severe injury.

WARNING: Do not use gasoline, crankcase drainings or oil containing gasoline, solvents or alcohol. Doing so will result in fire and/or explosion.

WARNING: Do not spray flammable liquids. Operate only where an open torch is permitted.

3. This fuel burning machine shall be installed only in locations where combustible dusts and flammable gases or vapors are not present.
4. In these oil burning models, use only kerosene, No.1 home heating fuel, or diesel fuel.

WARNING: Keep water spray, wand and high pressure hose away from electrical wiring or fatal electric shock may result. Read warning tag on electrical cord.

5. To protect the operator from electrical shock, the machine must be electrically grounded. It is the responsibility of the owner to connect this machine to a UL grounded receptacle of proper voltage and amperage ratings. Do not spray water on or near electrical components. Do not touch machine with wet hands or while standing in water. Always disconnect power before servicing.

CAUTION: Spray gun kicks back — hold with both hands.

6. Grip cleaning wand of attached pressure washer securely with both hands before starting cleaner. Failure to do this could result in injury from a whipping wand.

WARNING: High pressure stream of fluid that this equipment can produce can pierce the skin and its underlying tissues, leading to serious injury and possible amputation.

7. High pressure developed by the attached pressure washer can cause bodily injury or damage. Use caution when operating. Do not point the spray gun at anyone or at any part of the body. This machine is to be used only by qualified operators.
8. Never make adjustments on machine while it is in operation.

WARNING: High pressure spray can cause paint chips or other particles to become airborne and fly at high speeds.

9. Eye safety devices must be worn when using this equipment.

WARNING: Risk of asphyxiation — Use this product only in a well ventilated area.

10. When the machine is working, do not cover or place in a closed space where ventilation is insufficient.

WARNING: Risk of fire. Do not add fuel when the machine is operating or still hot.

11. Machines with a spray gun should not be operated with the spray gun in the off position for extended periods of time as this may cause damage to the pump. Check to make sure burner shuts off when spray gun trigger is closed.
12. Protect from freezing.
13. To prevent a serious injury, make certain quick coupler on discharge hose has locked before using pressure washer.
14. Do not allow acids, caustic or abrasive fluids to pass through the pump.
15. Inlet water must be cold and clean fresh water.
16. Do not allow CHILDREN to operate the pressure washer at any time. **THIS MACHINE MUST BE ATTENDED DURING OPERATION.**
17. The best insurance against an accident is precaution, and knowledge of the machine.
18. Do not operate this product when fatigued or under the influence of alcohol or drugs. Keep operating area clear of all persons.
19. We will not be liable for any changes made to our standard machines, or any components not purchased from us.
20. Do not overreach or stand on unstable support. Keep good footing and balance at all times.
21. Follow the maintenance instructions specified in the manual.
22. When making repairs disconnect from electrical source.
23. Turn burner off and open spray gun to allow water to flow and cool coil to 100°F before turning machine off.
24. Before disconnecting high pressure hose from hot water outlet, turn off burner to allow water to cool to 100°F, then turn off pump motor and water supply and operate spray gun to relieve back pressure in hose. This will prevent coil damage from thermal expansion.

Caution: This machine produces hot water and must have insulated components attached to protect the operator.

INSTALLATION

Place machine in a convenient location providing ample support, draining and room for maintenance.

This machine is intended for indoor use. Machine must be stored indoors when not in use.

Location:

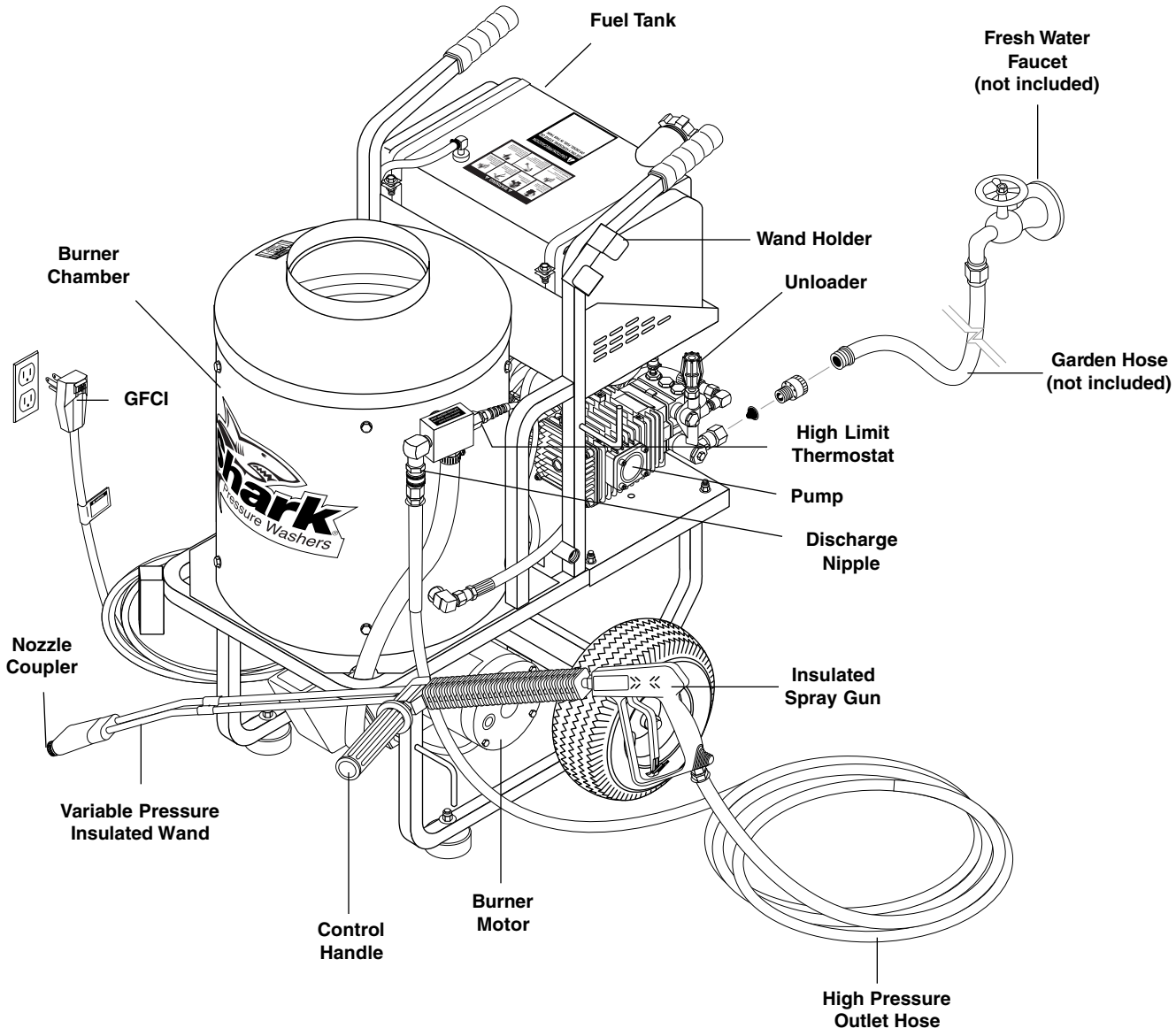
The location should protect the machine from damaging environmental conditions, such as wind, rain, and freezing.

1. This machine should be run on a level surface where it is not readily influenced by outside sources such as strong winds, freezing temperatures, rain, etc. It should be located to allow accessibility for refilling of fuel, adjustments and maintenance. Normal precautions should be taken by the operator of the machine to prevent moisture from reaching the electrical controls.
2. It is recommended that a partition be made between the wash area and the machine to prevent water spray from coming in contact with the machine. Excess moisture reaching any electric components or electrical controls will reduce machine life and may cause electrical shorts.
3. During installation of the machine, beware of poorly ventilated locations or areas where exhaust fans may cause an insufficient supply of oxygen. Sufficient combustion can only be obtained when there is a sufficient supply of oxygen available for the amount of fuel being burned. If it is necessary to install a machine in a poorly ventilated area, outside fresh air may have to be piped to the burner and a fan installed to bring air into the machine.

Avoid small locations or areas near exhaust fans.

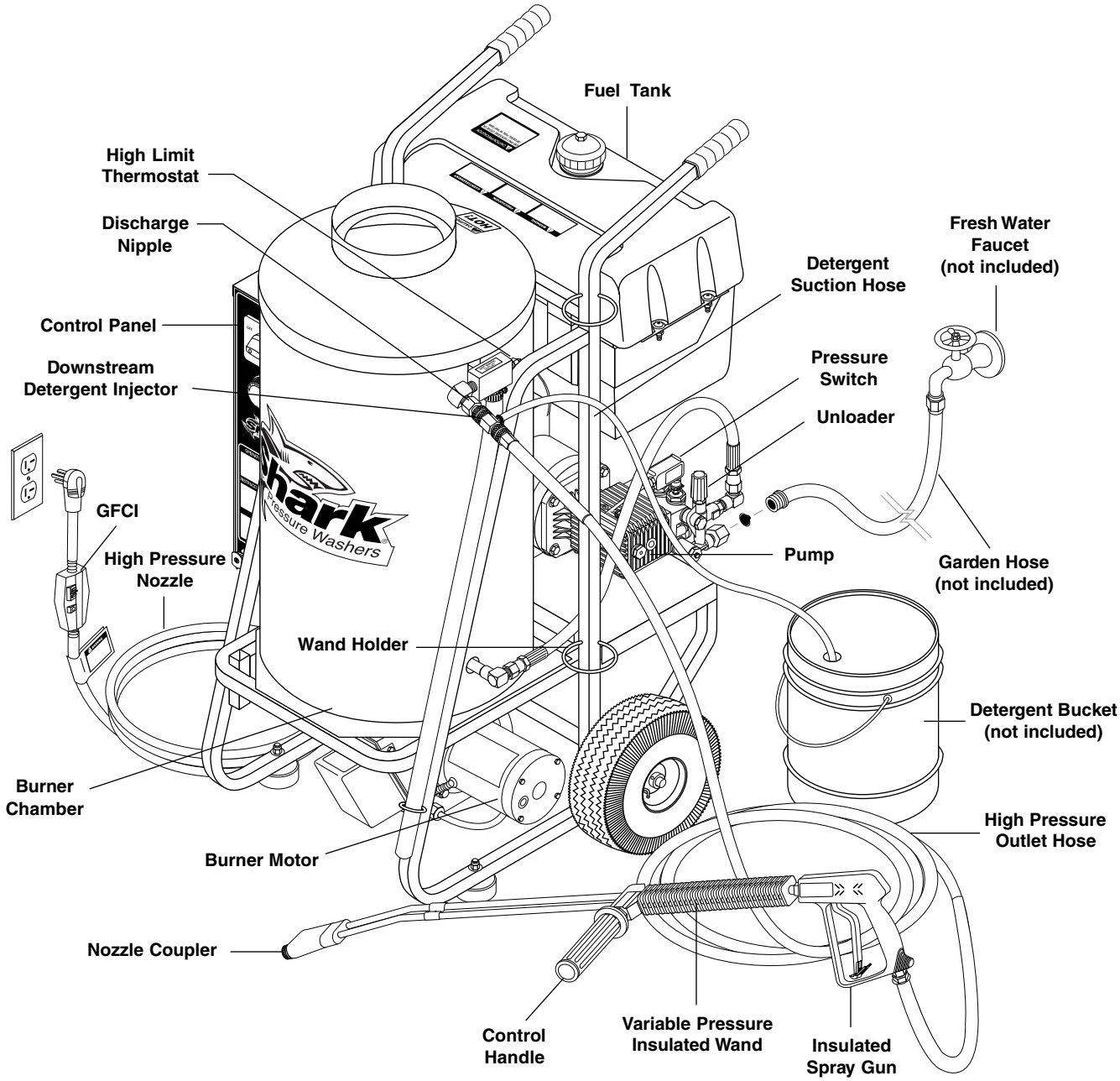
COMPONENT IDENTIFICATION

MINI SERIES



COMPONENT IDENTIFICATION
JUNIOR SERIES

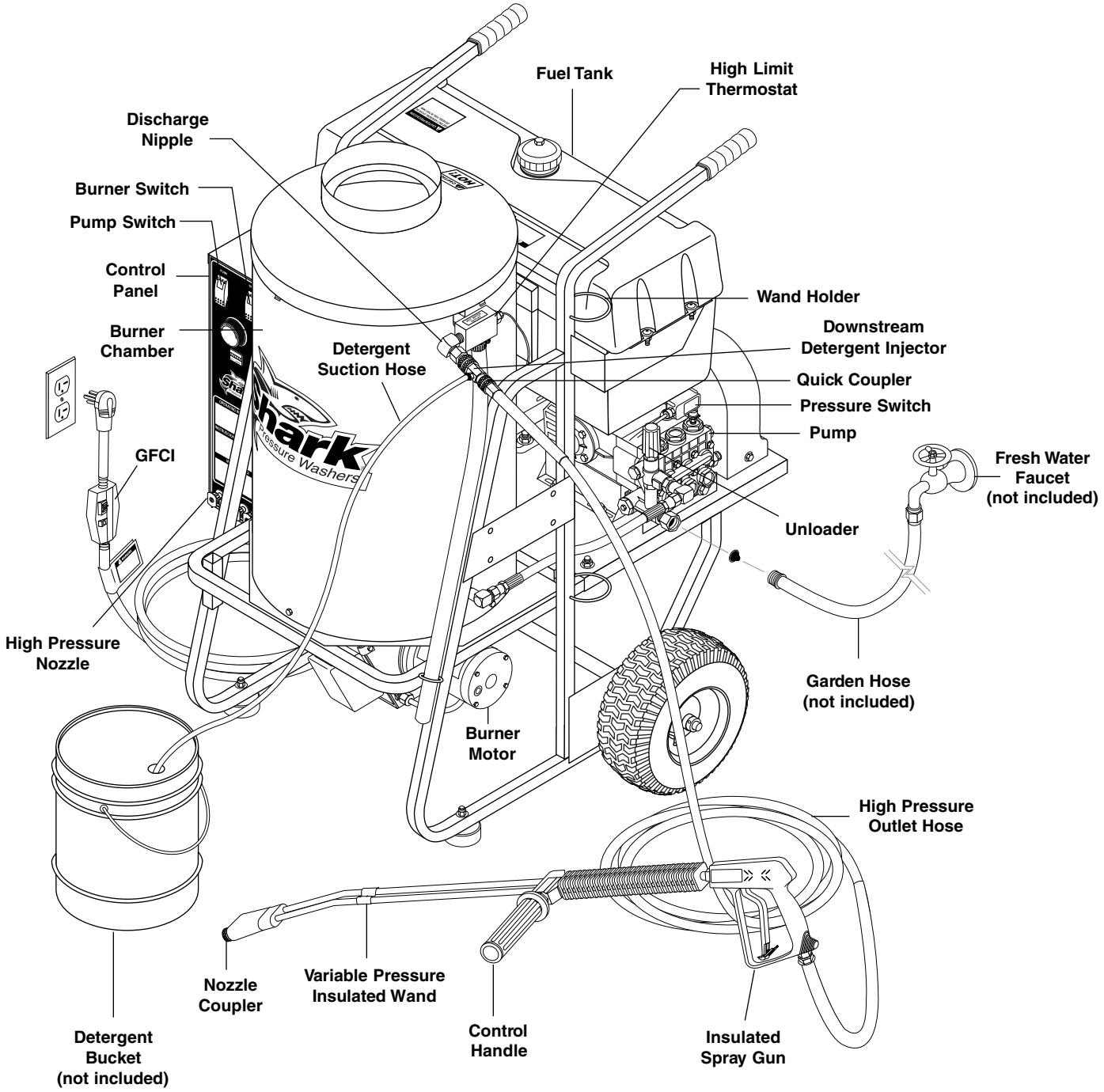
CAUTION HOT WATER: Must use insulated spray gun and wand.



COMPONENT IDENTIFICATION

SENIOR SERIES

CAUTION HOT WATER:
Must use insulated spray gun and wand.



Electrical:

This machine, when installed, must be electrically grounded in accordance to local codes. Check for proper power supply using a volt meter.

Placement:

Do not locate near any combustible material. Keep all flammable material at least 20 feet away.

Allow enough space for servicing the machine.

Local code will require certain distances from floor and walls. (Two feet away from walls should be adequate.)

Water Source:

The water source for the pressure washer should be supplied by a minimum 5/8" I.D. garden hose with a city water pressure of not less than 30 PSI. If the water supply is inadequate, or if the garden hose is kinked, the attached pressure washer will run very rough and the burner will not fire.

Connection:

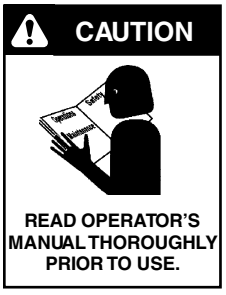
Connect the wand, nozzle, hose and spray gun (where applicable). On pipe thread connections, use teflon tape to avoid water leaks. (See Component Identification).

Venting:

Adding exhaust vent pipe to your oil fired burner is not recommended because restricted air flow causes carbon build-up, which affects the operation, and increases maintenance on the coil. If a stack must be used, refrain from using 90° bends. If the pipe can not go straight up then use only 45° bends and go to the next size pipe. The overall pipe length must not exceed 6 feet in length.

STARTING AND OPERATING INSTRUCTIONS

To Start:



1. **STOP!** Read operator's manual before operating. Failure to read operation and warning instructions may result in personal injury or property damage.
2. Connect water supply hose and turn on water.
3. Check fuel tank and pump oil levels.
4. Connect high pressure hose to discharge nipple by sliding quick coupler collar back. (If detergent is to be applied, insert a detergent injector as shown in Component Identification).
5. Insert quick coupler onto discharge nipple and secure by pushing quick coupler collar forward.
6. Securely attach the desired high pressure nozzle into wand coupler as described in steps 4 and 5.
7. Connect the power cord into the proper electrical outlet, then push in the GFCI reset button. (Refer to serial plate for information.)
8. Grip spray gun handle securely and pull trigger. Then turn variable pressure control handle counterclockwise.
9. Turn switch to pump position. When a steady stream of water flows from the spray gun and wand the machine is ready for cold water cleaning by turning the variable pressure control handle clockwise to raise the pressure.
10. For hot water washing, turn the switch to the burner position. (The burner will light automatically when the trigger on the spray gun is pulled.)

To Stop:

1. If using the detergent injector, place the suction line in a bucket of water allowing detergent to be flushed from system.
2. Turn HPB burner switch off and continue spraying water, allowing the water to cool.
3. After water has cooled to less than 100°F, turn the attached pressure washer off.
4. Turn garden hose water off. Open the spray gun to relieve remaining pressure.
5. Protect from freezing.

OPTIONAL EQUIPMENT

Auto Start/Stop Timer Operation

Once the pump switch is turned on, simply triggering the spray gun is all it takes to start the machine. Once the trigger is released the timer will let the machine bypass water for 15 seconds. It also starts an internal 5 to 60 minute lockout timer. This feature is totally adjustable by the operator by adjusting the knob at the top of the timer. We recommend setting the timer for 15 minutes. To reset the lockout feature, operator must trigger the spray for 10 full seconds.

PREVENTATIVE MAINTENANCE

1. Use clean fuel - kerosene, No. 1 home heating fuel or diesel fuel. Clean or replace fuel filter every 100 hours of operation. Avoid water contaminated fuel as it will seize up the fuel pump. De-soot coils monthly. Use an additive if diesel is being used.
2. Check to see that the attached pressure washer water pump is properly lubricated.
3. Follow winterizing instructions to prevent freeze damage to pump and coils.
4. Always neutralize and flush detergent from system after use.

5. If water is known to be high in mineral content, use a water softener on your water system, or de-scale as needed.
6. Do not allow acidic, caustic or abrasive fluids to be pumped through system.
7. Always use high grade quality cleaning products.
8. Never run attached pressure washer pump dry for extended periods of time.
9. If machine is operated with smoky or eye burning exhaust, coils will soot up, not letting water reach maximum operating temperature. (See section on Maintenance and Service).
10. Never allow water to be sprayed on or near the motor or burner assembly or any electrical component.
11. Delime coils as per instructions.

It is advisable, periodically, to visually inspect the burner. Check air inlet to make sure it is not clogged or blocked. Wipe off any oil spills and keep equipment clean and dry.

The areas around the HPB should be kept clean and free of combustible materials, gasoline and other flammable vapors and liquids.

The flow of ventilating air to the burner must not be blocked or obstructed in any manner.

MAINTENANCE AND SERVICE

Unloader Valves:

Unloader valves trap pressure in the line when a shut-off spray gun is closed. Machines with unloader valves are preset and tested at the factory before shipping. Occasional adjustment of the unloader may be necessary to maintain correct pressure.

Winterizing Procedure:

Damage due to freezing is not covered by warranty. Adhere to the following cold weather procedures whenever the washer must be stored or operated outdoors under freezing conditions.

During winter months, when temperatures drop below 32°F, protecting your machine against freezing is necessary. Store the machine in a heated room. If this is not possible then mix a 50/50 solution of anti-freeze/water or windshield washer fluid with water in a 5 gallon bucket. Place a short section of garden hose into the bucket and connect it to the machine. Elevate the bucket and turn the pump on to siphon the anti-freeze through the machine. If compressed air is available, an air fitting can be screwed into the inlet connector and by injecting compressed air, all water will be blown out of the system.

If you have an optional float tank, pour the antifreeze into this tank and run machine until antifreeze exits discharge nipple.

High Limit Hot Water Thermostat:

For safety, each machine is equipped with a high limit control switch. In the event the temperature of the water should exceed its operating temperature, the high limit control will turn the burner off until the water cools.

Pumps:

Use only SAE 30 weight non-detergent oil. Change oil after first 50 hours of use. Thereafter, change oil every three months or at 500 hour intervals. Oil level should be checked by using the dipstick found on the top of the pump or by the red dot visible through the oil gauge window. Oil should be maintained at that level.

Cleaning of Coils:

In alkaline water areas, lime deposits can accumulate rapidly inside the coil pipes. This growth is increased by the extreme heat build up in the coil. The best prevention for liming conditions is to use high quality cleaning detergents. In areas where alkaline water is an extreme problem, periodic use of Deliming Powder will remove lime and other deposits before coil becomes plugged.

Deliming Coils With A Pressure Washer:

Periodic flushing of coils is recommended.

Step 1 Fill a 5 gallon bucket with 4 gallons of water, then add 1 lb. of deliming powder. Mix thoroughly.

Step 2 Remove the high pressure nozzle from the pressure wand and put the wand into the bucket. Secure the trigger on the spray gun into the open position.

Step 3 Attach a short section (3-5 ft.) of garden hose to the attached pressure washer to siphon solution from the elevated bucket. Start up pressure washer, allowing solution to be pumped through pressure washer and into HPB coils and back into the bucket. Solution should be allowed to circulate 2-4 hours.

Step 4 After circulating solution flush entire system with fresh water.

Removal of Soot In Heating Coil:

In the heating process, fuel residue in the form of soot deposits may develop between the heating coil pipe and block air flow which will affect burner combustion. When soot has been detected on visual observation, the soot on the coil must be washed off after coil has been removed using the following steps:

1. Remove the tank head assembly by unscrewing the three tek screws and lifting the tank head off.
2. Remove the two pipe nipples and associated fittings.

3. Lift the coil out of the outer wrap.

CAUTION: The coil weighs about 80 lbs. Use proper lifting techniques.

4. Clean, repair and replace the coil by reversing the above steps.

Coil Reinstallation

Reinstall by reversing the above steps 4 through 1.

Rupture Disk

If pressure from pump or thermal expansion should exceed safe limits, the rupture disk will burst, allowing high pressure to be discharged through hose to ground. When the disk ruptures, it will need to be replaced.

Fuel:

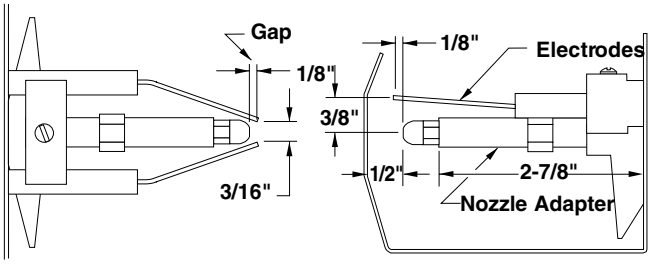
Use clean fuel oil that is not contaminated with water and debris. Replace fuel filter and drain tank every 100 hours of operation. Use Kerosene No. 1 or No. 2 Heating Fuel (ASTM D306) or diesel only. **NEVER** use gasoline in your burner tank. Gasoline is more combustible than fuel oil and could result in a serious explosion. **NEVER** use crankcase or waste oil in your burner. Fuel unit malfunction could result from contamination.

Ignition Circuit:

Periodically inspect wires, spring contact and electrodes for condition, security and proper spacing. **For transformer test (CAUTION 10,000 VOLTS)** use defect free insulated screwdriver and keep fingers off blade! Lay blade across one contact: OK if arc will span 1/2" between end of blade and other contact.

Electrode Setting - Wayne:

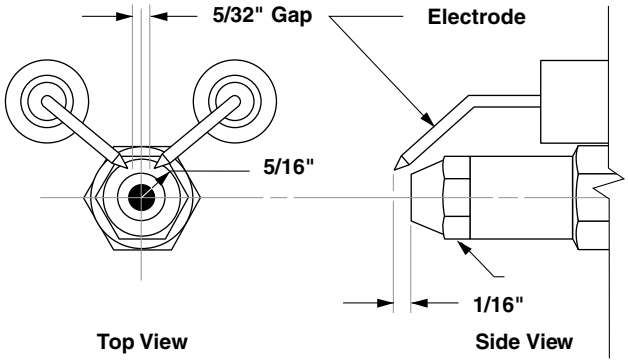
(See illustration below)



Electrodes Check: Periodically check wiring connections. If necessary to adjust electrodes, use diagram.

Electrode Setting - Beckett:

(See illustration below)



Electrodes Check: Periodically check wiring connections. If necessary to adjust electrodes, use diagram.

Burner Nozzle:

Keep the tip free of surface deposits by wiping it with a clean, solvent-saturated cloth, being careful not to plug or enlarge the nozzle. For maximum efficiency, replace the nozzle each season.

Fuel Control System:

The HPB utilizes a fuel solenoid valve located on the fuel pump to control the flow of fuel to the combustion chamber. This solenoid is activated by a pressure switch located on the unloader valve. When an operator releases the trigger on the spray gun, the pressure drops, allowing the pressure switch to activate the fuel solenoid. The solenoid then closes, shutting off the supply of fuel to the combustion chamber. Controlling the flow of fuel in this way gives an instantaneous burn or no burn situation, thereby eliminating high and low water temperatures, and combustion smoke normally associated with machines incorporating a spray gun. Periodic inspection is recommended to insure that the fuel solenoid valve functions properly. This can be done by operating the machine and checking to see that when the trigger on the spray gun is in the off position, the burner is not firing.

Fuel Pressure Adjustment:

To adjust fuel pressure, turn the adjusting screw with a standard screwdriver (located on the fuel pump) clockwise to increase, counterclockwise to decrease. Do not exceed 200 PSI.

Air Adjustment

Machines are preset and performance tested at the factory — elevation 100' above sea level. A one time correction for your location will pay off in economy, performance and extended service life. If a smoky or eye-burning exhaust is being emitted from the stack, two things should be checked.

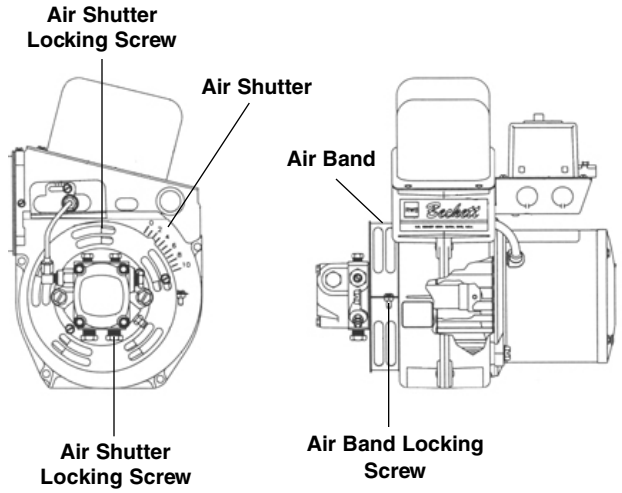
First, check the fuel to be certain that kerosene or No. 1 home heating fuel is being used.

Next, check the air adjustment on the burner. An oily, black, smoky fire indicates a lack of air and the air band should be moved to allow the air to flow through the burner. Sharp, eye-burning white fumes indicate too much air flowing through the combustion chamber. The air band should be moved to allow less air to flow through the burner.

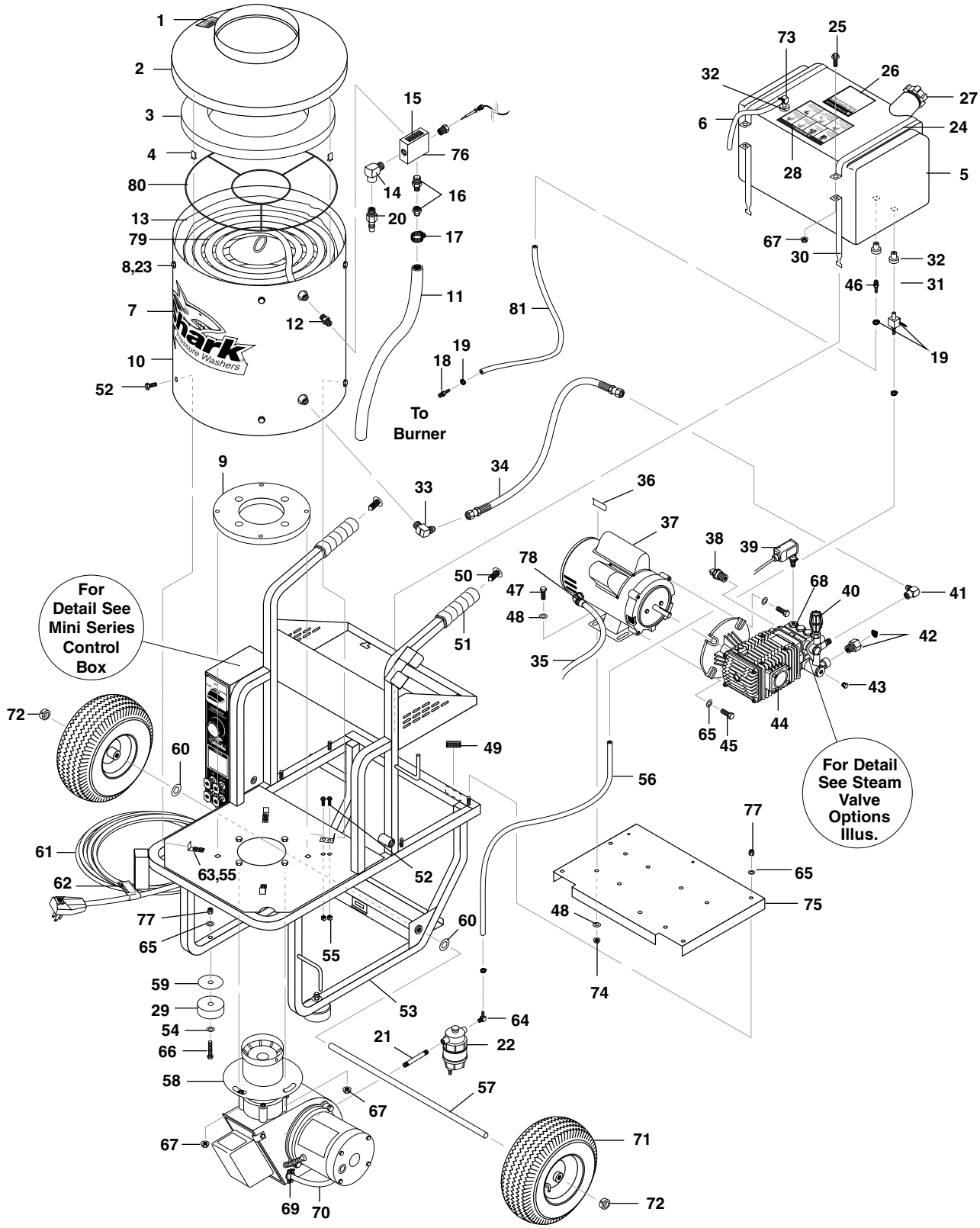
To adjust: start machine and turn burner ON. Loosen two locking screws found in the air shutter openings (refer to illustration below) and close air shutter until black smoke appears from burner exhaust vent. Note air band position. Next, slowly open the air shutter until white smoke just starts to appear. Turn air shutter halfway back to the black smoke position previously noted. Tighten locking screws.

If the desired position cannot be obtained using only the air shutter, lock the air shutter in as close a position as can be obtained, then repeat the above procedure on the air band setting.

FUEL AIR ADJUSTMENT



HPB MINI SERIES
EXPLODED VIEW



HPB MINI SERIES

EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	10-02025A	Label, Hot/Caliente w/Arrows Warning	1
2	95-07290029	Tank Head Assy	1
3	7-014862	Insulation, Top Head	1
4	90-50045	Clip, Retaining U-Type	4
5	2-0115090	Tank, Fuel 6 Gal Blank	1
6	4-02100000	Hose, 1/4", Push-On, Fuel Line (10")	1
7	11-013	Label, Logo	1
8	90-19710	Screw, 1/4" x 3/4" HH NC, Whiz Loc	4
9	7-014861	Insulation, Bottom	1
10	95-07102249	Coil Wrap	1
11	4-02130050	Hose, 7/8" Push-On, Conduit	1.333 ft
12	2-0008	Nipple, 1/2" Hex Steel	1
13	7-01487	Insulation, Blanket	1
14	2-0031	Elbow, 3/8" Street, 90°	1
15	10-09004	Label, Hot Water Outlet	1
16	2-3408	Disk, Rupture Assy, 8000 PSI	1
17	2-90041	Clamp, Screw, #16 Micro	1
18	2-1085	Hose Barb, 1/4" Barb x 1/4" ML Pipe	1
19	2-9000	Clamp, Screw, #4	4
20	2-2007	Nipple, 3/8" x 3/8" NPT ST Male	1
21	2-1010	Nipple, 1/4" x 2-1/2"	1
22	2-99050	Filter, Fuel/Oil/H_2O	1
23	90-2022	Nut, Cage, 1/4" x 16 GA	4
24	95-07102247	Fuel Strap, Long	2
25	90-1996	Screw, 3/8" x 3/4" HH NC, Whiz	2
26	10-020110	Label, Use Only Kerosene	1
27	2-011576	Cap, Non-Vented, Plastic	1
28	11-1043	Label, Warning, Pictorial	1
29	2-01041	Pad, Soft Rubber, 50 DURO	2
30	95-07102248	Fuel Strap, Short	2
31	2-30057	Valve, 1/4" Shut-Off	1
32	2-010061	Bushing, Rubber, Nitrile	3
33	2-0053	Elbow, 1/2" JIC, 3/8", 90°	1

ITEM	PART NO.	DESCRIPTION	QTY
34	4-02047732	Hose, 3/8" x 32, 2 Wire, Pressure Loop	1
35	6-01041	Cord, Service, SEO, 12/3, per ft, Coleman	0.84 ft
36	10-99078	Label, Motor Overload Reset, Lexan	1
37	5-1046	Motor, 1-1/2HP, 120V 3450 RPM, Baldor	1
38	2-30082	Pump Protector, 1/2" PTP	1
39	6-021720	Switch, Pressure N/O, 1/4" NPT SS	1
40	5-3150	Unloader, APR.S 2300 (201107)	1
	5-3024	Unloader, PA, VB135L (201101)	1
41	2-00601	Elbow, 1/2" JIC x 3/8" Fem	1
42	2-10942	Swivel, 1/2" MP x 3/4" GHF, w/Strainer	1
43	2-1046	Plug, 1/4" Countersunk (201107)	1
	2-1044	Plug, 1/8" Countersunk (201101)	1
44	5-1618	Pump, Legacy WMH-2521-F (201107)	1
	2-23001	Pump, General, TT-9061 EBF (201101)	1
45	90-1016	Bolt, 3/8" x 1", NC HH	4
46	2-10866	Hose Barb, 1/4" x 3/8" Double	1
47	90-1016	Bolt, 5/16" x 3/4" NC GR 5 CS ZN	4
48	90-4001	Washer, 5/16", Flat, SAE	12
49	10-09003	Label, Cold Water Inlet, HS	1
50	2-0155	Fastener, Ratchet, Black Nylon	2
51	2-01103	Grip, 1" Sqr, Handle	2
52	90-19711	Screw, 1/4" x 1/2" HH NC, Whiz Loc	12
53	95-07102218	Assy, Frame	1
54	90-40125	Washer, 3/8" x 1"	2
55	90-20231	Nut, Cage, 1/4" x 12 GA	8
56	4-02100000	Hose, 1/4" Push-On (21")	1
57	95-07102311	Axle, 5/8" x 22"	1
58	Burner Assembly, See Burner Spec's Page 30		
59	90-4015	Washer, 7/16" x 2-1/2", Zinc, PG Foot	2

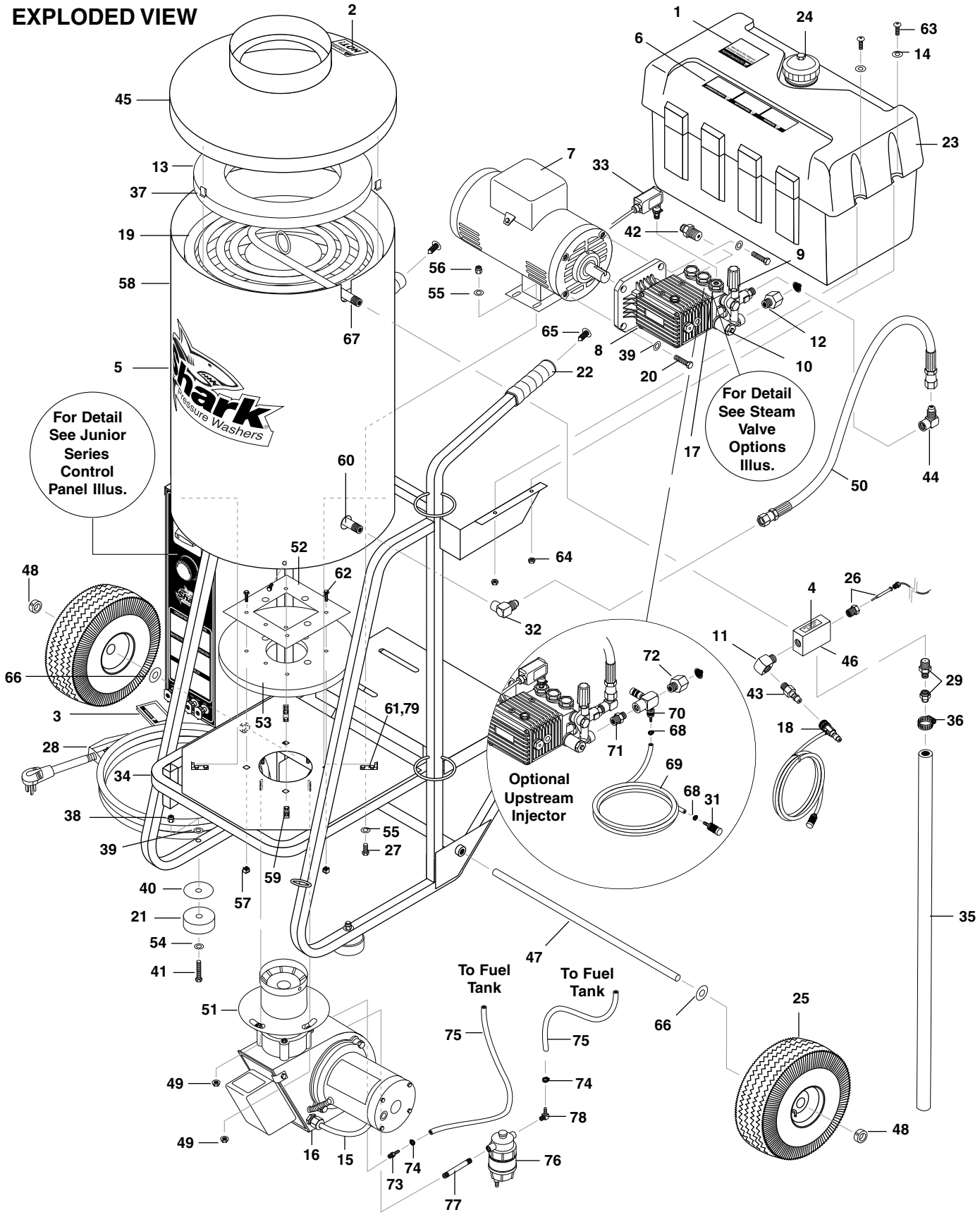
HPB MINI SERIES

EXPLODED VIEW PARTS LIST (CONTINUED)

ITEM	PART NO.	DESCRIPTION	QTY
60	90-4005	Washer, 5/8", Flat, SAE	2
61	6-01060	GFCI, 120V 20A, w/36' 12-3 Cord	1
62	10-08018	Label, Warning, Service Cord	1
63	95-07290007	Outer Wrap Tabs	4
64	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	1
65	90-4002	Washer, 3/8", SAE, Flat	8
66	90-10201	Bolt, 3/8" x 2-1/4", HH, GRD.5	2
67	90-20040	Nut, 3/8", Flange Whiz Loc, NC	6
68	15-070042532	Cap, Valve, with 1/4" Gauge Port (201107)	1
	1-190031	Cap, Valve, with 1/4" Gauge Port (201101)	1
69	6-0516	Strain Relief, 1/2" Metal, Two Screw	1
70	6-01011	Cord, Service, SEO, 16/4, per ft, Coleman	3 ft
71	4-0303	Wheel & Tire Assy, 4" Steel Rim w/Tube	2
72	90-20041	Collar, 5/8" Bore Shaft 3010	2
73	2-010066	Elbow, Fuel Tank, Zinc	1
74	90-2001	Nut, 5/16" ESNA, NC	4
75	95-07102217	Assy, Power Platform, Mini	1
76	95-07101225	Block, Discharge, Brass 3/8" x 1/2"	1
77	90-2002	Nut, 3/8", ESNA, NC	6
78	6-0515	Connector, Flex, 90°, 3/8" (Motor)	1
79	95-07102310	Assy, Coil	1
80	95-07104506	Insulation Retainer Ring, 16"	1
81	4-02100000	Hose, 1/4"	1

HPB JUNIOR SERIES

EXPLODED VIEW



HPB JUNIOR SERIES
EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	10-020110	Label, Use Only Kerosene	1
2	10-02025A	Label, "Hot/Caliente" with Arrows Warning	1
3	10-08018	Label, Warning, Service Cord	1
4	10-09004	Label, Hot Water Outlet	1
5	11-014	Label, Logo Large	1
6	11-0101	Label, Warning (Lexan)	1
7	5-1053	Motor, 5 HP, 1 PH 230V 3450 RPM, Baldor	1
8	5-1621	Pump, Legacy WMH-2035-F (352007)	1
	5-2303	Pump, General, TT-2035 EBF, (352001)	1
9	5-3150	Unloader, APR.S 2300 (352007)	1
	5-3024	Unloader, PA VB135L TT (352001)	1
10	2-1046	Plug, 1/4" (Legacy)	1
	2-1044	Plug, 1/8" (General)	1
11	2-0031	Elbow, 3/8" Street	1
12	2-10943	Swivel, 3/8" x 3/8" GHF	1
13	7-014832	Tank Head Insul.	1
14	90-40001	Washer, 1/4"	4
15	6-0128	Conduit, 25"	1
16	6-051591	Strain Relief, 90°	1
17	1-190031	Cap, Valve w/1/4" Port (General)	1
	15-070042532	Cap. Valve w/1/4" Port (Legacy)	1
18	4-011183	Downstream Injector Assy, Non-Adj #2	1
19	95-07121218	Coil, Heating, Jr	1
20	90-1016	Bolt, 3/8" x 1"	4
21	2-01041	Pad, Soft Rubber, 50 Duro	2
22	2-01103	Grip, 1" SQR, Handle	2
23	2-011506	Tank Fuel, 9 Gallon Poly, Black	1
24	2-01167	Cap, Fuel Tank Plastic H60-AV	1
25	4-0303	Wheel & Tire, 4" Steel Rim w/Tube	2
26	4-05088	Adjustable Thermostat	1
27	90-1006	Bolt, 5/16" x 3/4"	4
28	6-01059	GFCI, 240V 1PH 30A w/36' 10-3 Cord (352007, 352001)	1
29	2-3408	Disk, Rupture Assy, 8000 PSI	1
	2-3480	Rupture Disk Replacement, 8000 PSI	1
30	2-99031	Fuel Filter	1
31	2-1905	Strainer, 1/4" Brass	1
32	2-00602	Elbow, 1/2" JIC x 1/2" FM	1
33	6-021720	Pressure Switch, 1/4"	1
34	95-07102224	Frame, HPB Junior	1
35	4-02130050	Hose, 7/8" /Ft.	2.5
36	2-90041	Clamp, Screw #16	1
37	90-50045	Clip, Retainer	4
38	90-2002	Nut, 3/8" ESNA	2
39	90-4002	Washer, 3/8" Flat	6
40	90-4015	Washer, 3/8" x 2-1/2"	2
41	90-10201	Bolt, 3/8" x 2-1/4"	2
42	2-300816	Pump Protector, 3/8" General Pump Assembly	1
	2-30082	Pump Protector, 1/2" Legacy Pump Assembly	1
43	2-2007	Coupler Plug, 3/8" Male	1
44	2-00601	Elbow, 1/2" JIC x 3/8" Fem	1
45	95-07290029	Tank Head Assembly 16" x 8"	1
46	95-07101225	Block Discharge 3/8" x 1/2"	1
47	95-07102205	Axle, 5/8" x 27"	1
48	90-20041	Collar, 5/8"	2
49	90-20040	Nut, 3/8" Flange, Whiz Loc	4
50	4-02047729	Hose, 3/8" x 29", Press Loop	1
51	Burner Assembly, See Burner Spec's Page 30		
52	95-07290053	Retainer, Burner Insulation	1
53	7-01482	Insulation, Tank Bottom, 1" Blanket	1
54	90-40125	Washer, 3/8" x 1"	2
55	90-4001	Washer, 5/16", Flat	8

HPB JUNIOR SERIES
EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
56	90-2001	Nut, 5/16", ESNA	4
57	90-2020	Nut, Cage, 3/8" x 12 GA	4
58	95-07200129	Wrap, Outer Coil, Red	1
59	95-0729007	Tab, Outer Wrap	4
60	2-00091	Nipple, 1/2" x 3", Galv.	1
61	90-19711	Screw, 1/4" x 1/2", Whiz Loc	12
62	90-19960	Screw, 3/8" x 1-1/4" Whiz Loc	4
63	90-19980	Screw, 1/4" x 1"	4
64	90-200012	Nut, 1/4" Flange	4
65	2-0155	Fastener, Ratchet, Black Nylon	2
66	90-4005	Washer, 5/8" Flat	2
67	2-00101	Nipple, 1/2" x 4", Galv.	1
68	2-9000	Clamp, Screw, #4	6
69	4-02080000	Tube, 1/4" x 1/2", Clear Vinyl	6 ft
70	3-1007	Injector, Adjustable Inlet	1
71	2-1058	Nipple, 1/2" Pipe x 3/8" Pipe	1
72	2-10943	Swivel, 3/8" MP x 3/4" GHF	1
73	2-1085	Hose Barbs	2
74	2-9000	Hose Clamp	6
75	4-02100000	Fuel Line, 1/4"	4.83 ft
76	2-99050	Filter, Fuel/Oil/H_2O	1
77	2-0013451	Nipple, 1/4" x 3" Black Pipe	1
78	2-1089	Elbow, 1/4" Hose Barb x 1/4" Pipe	1
79	90-20231	Nut, Cage, 1/4" x 12 GA	8

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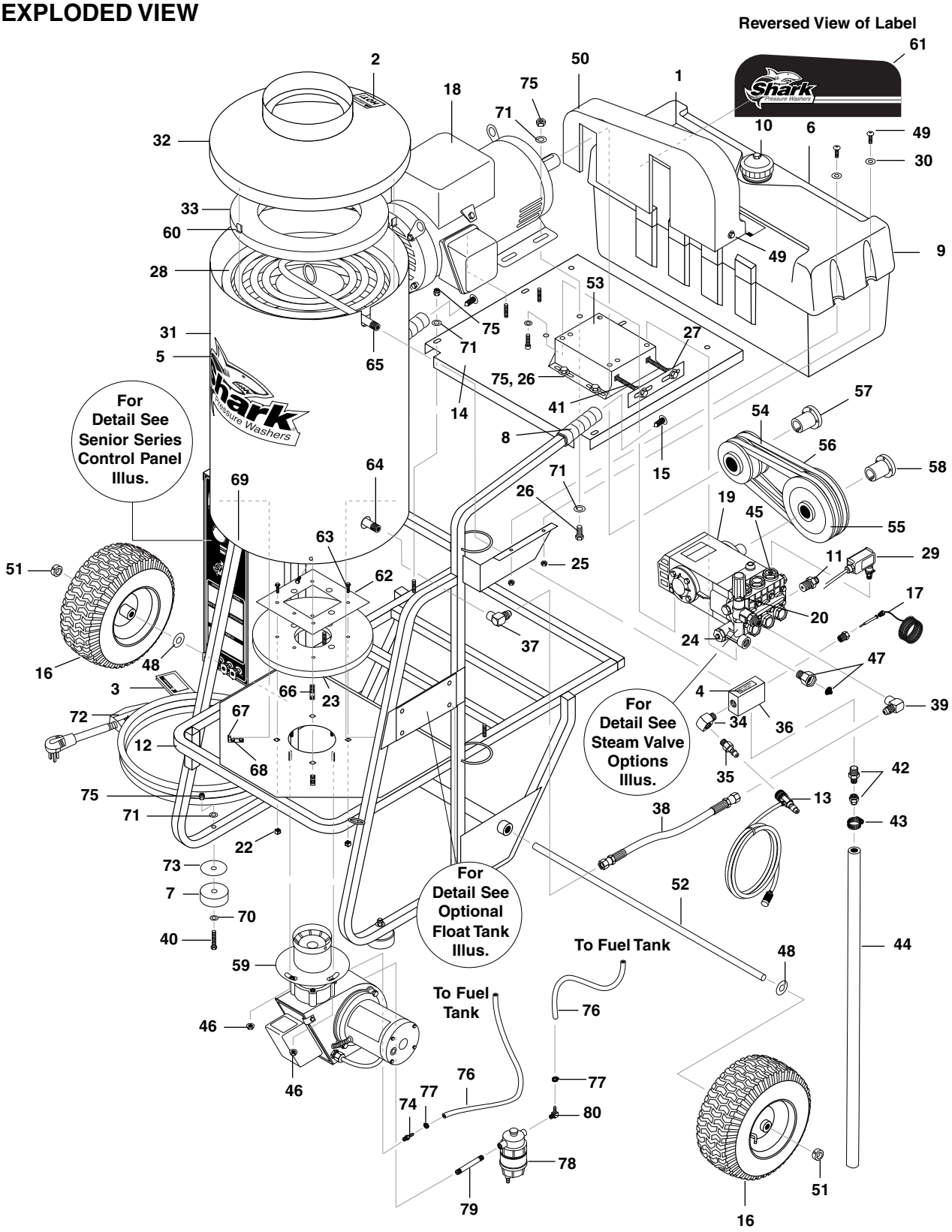
HPB SENIOR SERIES

EXPLODED VIEW


Reversed View of Label
For Detail See Senior Series Control Panel Illus.
For Detail See Steam Valve Options Illus.
For Detail See Optional Float Tank Illus.
To Fuel Tank
To Fuel Tank

HPB SENIOR SERIES
EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	10-020110	Label, Use Only Kerosene	1
2	10-02025A	Label, "Hot/Caliente" with Arrows Warning	1
3	10-08018	Label, Warning, Service Cord	1
4	10-09004	Label, Hot Water Outlet	1
5	11-014	Label, Logo Large	1
6	11-0101	Label, Warning (Lexan)	1
7	2-01041	Pad, Soft Rubber, 50 Duro	2
8	2-01103	Grip, 1" SQR, Handle, SHARK	2
9	2-011506	Tank, Fuel, 9 Gallon Poly, Black	1
10	2-01167	Cap, Fuel Tank, Plastic H60-AV	1
11	2-30082	Pump Protector, 1/2" PTP	1
12	95-07102210	Frame	1
13	4-011184	Downstream Injector Assy., Non Adj. #3	1
14	95-07102211	Power Platform	1
15	2-0155	Fastener, Ratchet Black Nylon	2
16	4-0307	Wheel & Tire, 6" Steel Rim	2
17	4-05088	Thermostat, General 302 DGR	1
18	5-10401	Motor, 6 HP 1 PH 1725 RPM (402001, 402007)	1
19	5-1651	Pump, Legacy TML-3053 (402007)	1
	5-2304	Pump, General, T-1011 (402001)	1
20	5-3208	Unloader, AL607	1
	5-3151	Unloader, APR.S 3000 (402007)	1
	5-3025	Unloader, PA VB75K47L T (402001)	1
21	2-99031	Fuel Filter	1
22	90-2020	Nut, Cage, 3/8" x 12 GA	4
23	7-014865	Insulation Blanket, 18" OD x 4.5" ID	1

ITEM	PART NO.	DESCRIPTION	QTY
24	2-1046	Plug, 1/4" (Legacy)	1
	2-1044	Plug, 1/8" (General)	1
25	90-200012	Nut, 1/4", Flange	4
26	90-1016	Bolt, 3/8" x 1"	8
27	90-10220	Bolt, 3/8" x 3-1/2", TAP	2
28	95-07164054	Coil 18"	1
	7-01433	▲ Insulation Blanket	1
29	6-021720	Pressure Switch, 1/4"	1
30	90-40001	Washer, 1/4"	4
31	95-07164053	Outer Wrap, 18" Coil	1
32	95-07163088	Tank End 18"	1
33	7-014866	Insulation Disk	1
34	2-0031	Elbow, 3/8" Street	1
35	2-2007	Nipple, 3/8"	1
36	95-07101225	Discharge Block, 3/8" x 1/2"	1
37	2-00602	Elbow, 1/2" JIC x 1/2" FEM	1
38	4-02047722	Hose, 3/8" x 22"	1
39	2-00601	Elbow, 1/2" JIC, 3/8" Fem	1
40	90-10201	Bolt, 3/8" x 2-1/4"	1
41	90-2007	Nut, 3/8" Hex	2
42	2-3408	Rupture Disk Assy, 8000 PSI	1
	2-3480	Replacement, Rupture Disk 8000 PSI	1
43	2-90041	Screw Clamp #16	1
44	4-02130050	Hose, 7/8" /ft.	2.5
45	1-190029	Cap, Valve w/1/4" Port (General)	1
	15-070042532	Cap, Valve w/1/4" Port (Legacy)	1
46	90-20040	Nut, 3/8" Flange, Whiz Loc	4
47	2-10942	Swivel, 1/2", GHF	1
48	90-4005	Washer, 5/8" Flat	2
49	90-19980	Screw, 1/4" x 1"	7
50	2-011724	Belt Guard	1
	95-07102101	▲ Tab, Belt Guard Mount	3
51	90-20041	Collar, 5/8"	2

HPB SENIOR SERIES

EXPLODED VIEW PARTS LIST (CONTINUED)

ITEM	PART NO.	DESCRIPTION	QTY
52	95-07102215	Axle, SR	1
53	95-07121112	Pump Rail	1
54	5-40204401	Pulley, 2AK 44 H (402007)	1
	5-40204101	Pulley, 2AK 41 H (402001)	1
55	5-40206401	Pulley, 2AK 64 H (402007, 402001)	1
56	5-602031	Belt, AX31 (402001, 402007)	2
57	5-511113	Bushing H x 1-1/8" (402001, 402007)	1
58	5-512024	Bushing H x 24mm	1
59	Burner Assembly, See Burner Spec's Page 30		
60	90-50045	Clip, Retainer	4
61	11-3229	Label, Belt Guard, SHARK	1
62	95-07290053	Retainer, Burner Insulation	1
63	90-19960	Screw, 3/8" x 1-1/4" Whiz Loc	4
64	2-00091	Nipple, 1/2" x 3", Galv.	1
65	2-00101	Nipple, 1/2" x 4", Galv.	1
66	95-0729007	Tab, Outer Wrap	4
67	90-20231	Nut, Cage, 1/4"" x 12 GA	14
68	90-19711	Screw, 1/4" x 1/2", Whiz Loc	15
69	90-19708	Screw, 1/4" x 1-1/4", Whiz Loc	4
70	90-40125	Washer, 3/8" x 1"	2
71	90-4002	Washer, 3/8", Flat	25
72	6-01059	GFCI, 230V (402001A, 402007A)	1
73	90-4015	Washer, 7/16" x 2-1/2"	2
74	2-1085	Hose Barbs	2
75	90-2002	Nut, 3/8", ESNA	13
76	4-02100000	Fuel Line, 1/4"	6.83 ft
77	2-9000	Hose Clamp	6
78	2-99050	Filter, Fuel/Oil/ H_2O	1
79	2-0013451	Nipple, 1/4" x 3" Black Pipe	1
80	2-1089	Elbow, 1/4" Hose Barb x 1/4" Pipe	1

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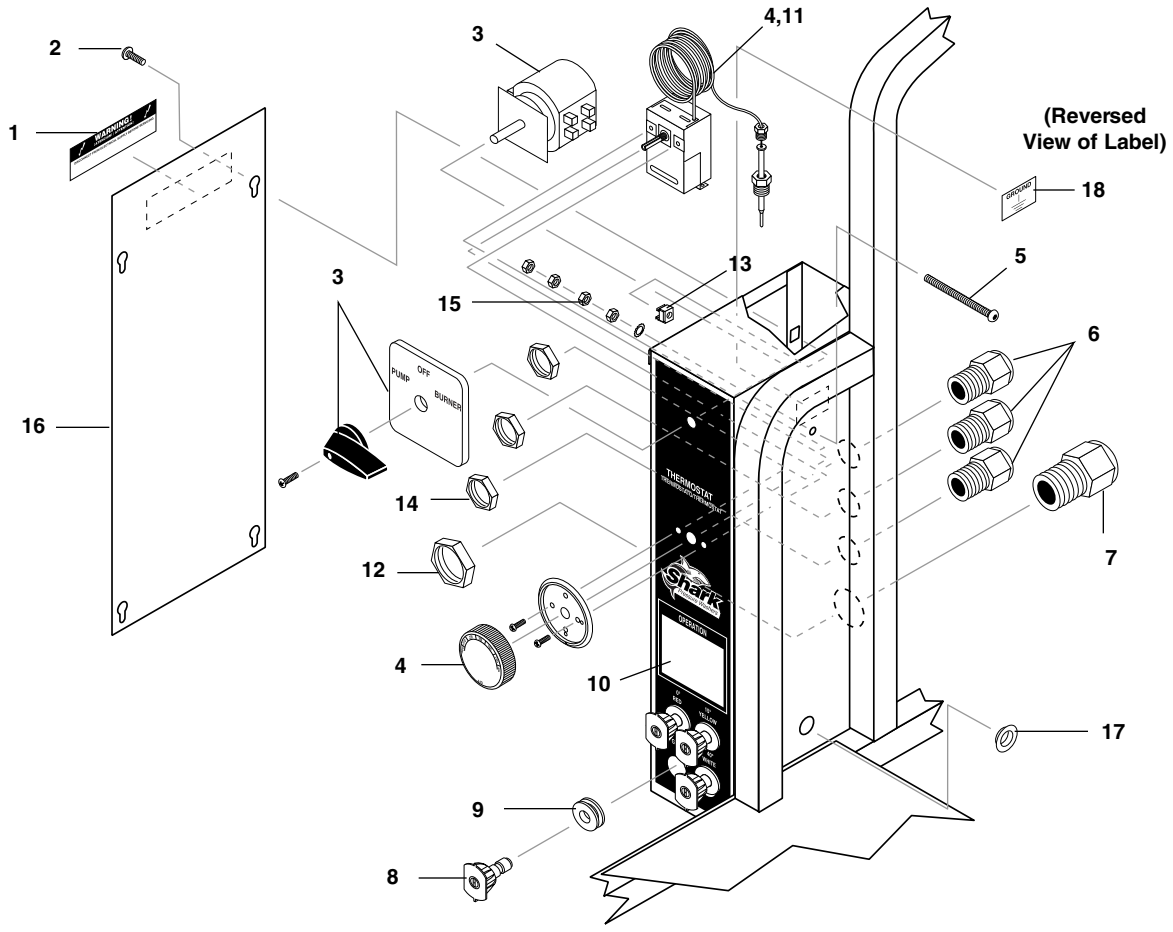
CONTROL PANEL

MINI SERIES



ITEM	PART NO.	DESCRIPTION	QTY
1	10-08021	Label, Disconnect Pwr Supply	1
2	90-1991	Screw, 10/32" x 1/2" NHSOC, Blk	4
3	6-020201	Switch, 3 PS, 115V-230V, 1PH	1
4	4-05088	Thermostat, Adjustable, 302°F	1
5	90-1994	Screw, 10/32" x 1-1/4" RH, SL, Blk	1
6	6-05152	Strain Relief, STRT, LQ TITE 3231, Small	3
7	6-051595	Strain Relief, STRT, LQ TITE 3234, Large	1
8	4-12804015	Nozzle, SAQCMEG 1504, Yellow	1
	4-12804040	Nozzle, SAQCMEG 4004, White	1

ITEM	PART NO.	DESCRIPTION	QTY
8	4-12804025	Nozzle, SAQCMEG 2504, Green	1
	4-12804000	Nozzle, SAQCMEG 0004, Red	1
9	2-0103	Grommet, Rubber, Nozzle Holder	4
10	11-0318	Label, Control Panel, Mini	1
11	6-01270	▲ Conduit, 1/4" Split	37 in
12	6-05181B	Locknut, 3/4" 8465	1
13	9-2018	Nut, Cage, 10/32" x 16 GA	4
14	6-05181A	Locknut, 1/2" 8463	3
15	90-017	Nut, 10/32" Keps	5
16	95-07102246	Electric Box Cover, Mini	1
17	2-01403	Bushing, Snap, 5/8"	1
18	11-1042	Label, Ground	1

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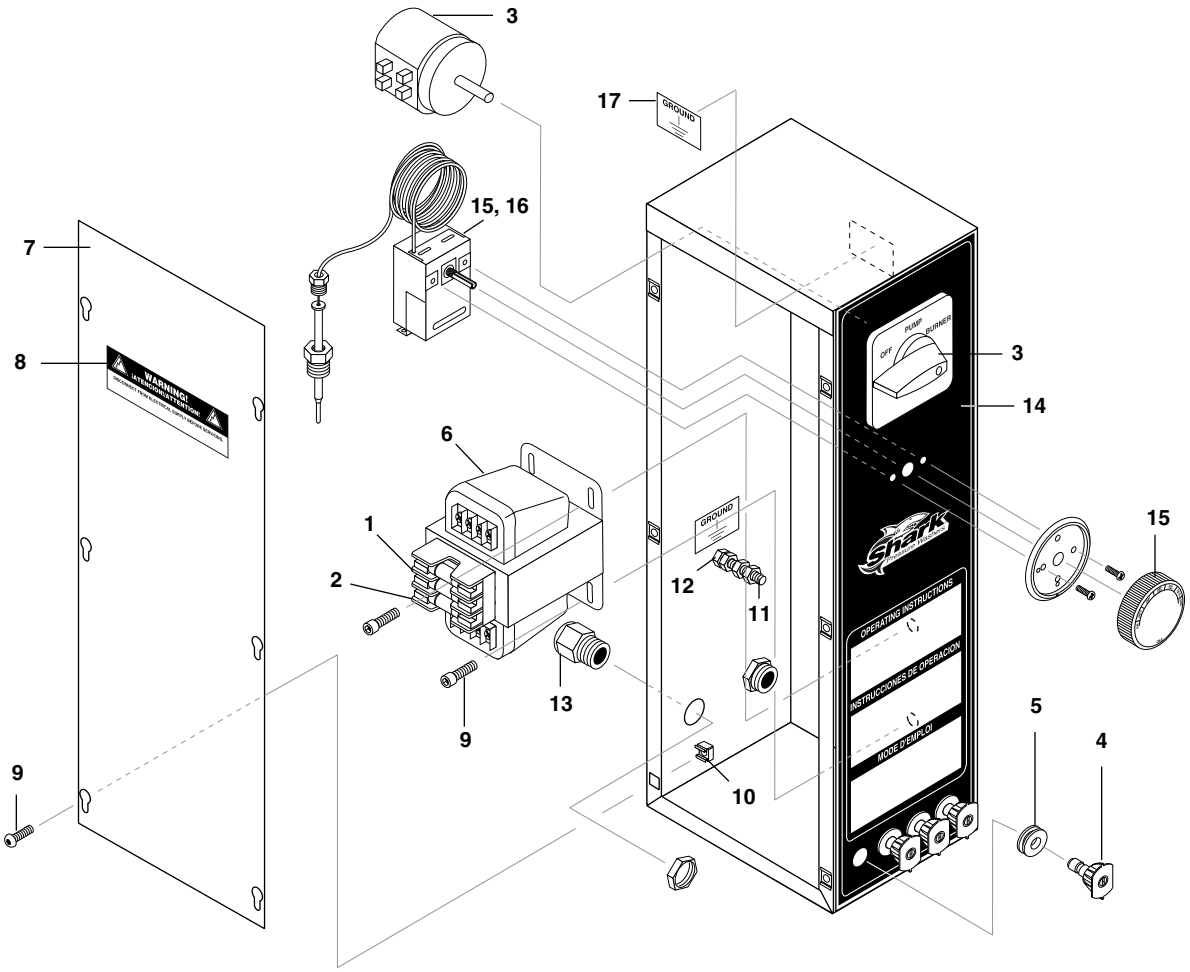
CONTROL PANEL
JUNIOR SERIES



ITEM	PART NO.	DESCRIPTION	QTY
1	6-02294	Fuse, ATMR, 1 Amp, 600 Volt (230V Units)	2
2	6-022970	Fuse, Paper, Buss, FNM - 1/2, 250V (230V Units)	1
3	6-020201	Switch, 3 PS, 115V-230V, 1 PH Salzer	1
4	4-12805000	Nozzle, SAQCMEG 0005, Red (352007, 352001)	1
	4-12805015	Nozzle, SAQCMEG 1505, Yellow (352007, 352001)	1
	4-12805025	Nozzle, SAQCMEG 2505, Green (352007, 352001)	1
	4-12805040	Nozzle, SAQCMEG 4005, White (352007, 352001)	1
5	2-0103	Grommet, Rubber, Nozzle Holder	4
6	6-60101	Transformer, Micron 240/480-120V (352007, 352001)	1

ITEM	PART NO.	DESCRIPTION	QTY
7	95-07102240	Cover, Electrical Box	1
8	10-08021	Label, Disconnect Pwr Supply	1
9	90-1991	Screw, 10/32" x 1/2"	10
10	90-2018	Nut, Cage, 10/32" x 16 GA	6
11	90-1994	Screw, 10/32" x 1-1/4"	1
12	90-017	Nut, 10/32" Keps	10
13	6-051591	Connector, 1/2", L/T 90°, Black	1
	6-051595	Strain Relief, STRT, L/T, LG	2
	6-05152	Strain Relief, STRT, L/T, Sm	1
14	11-0305	Label, Control Panel	1
15	4-05088	Adjustable Thermostat	1
16	6-01270	▲ 1/4" Split Conduit	5 ft
17	11-1042	Label, Ground	1

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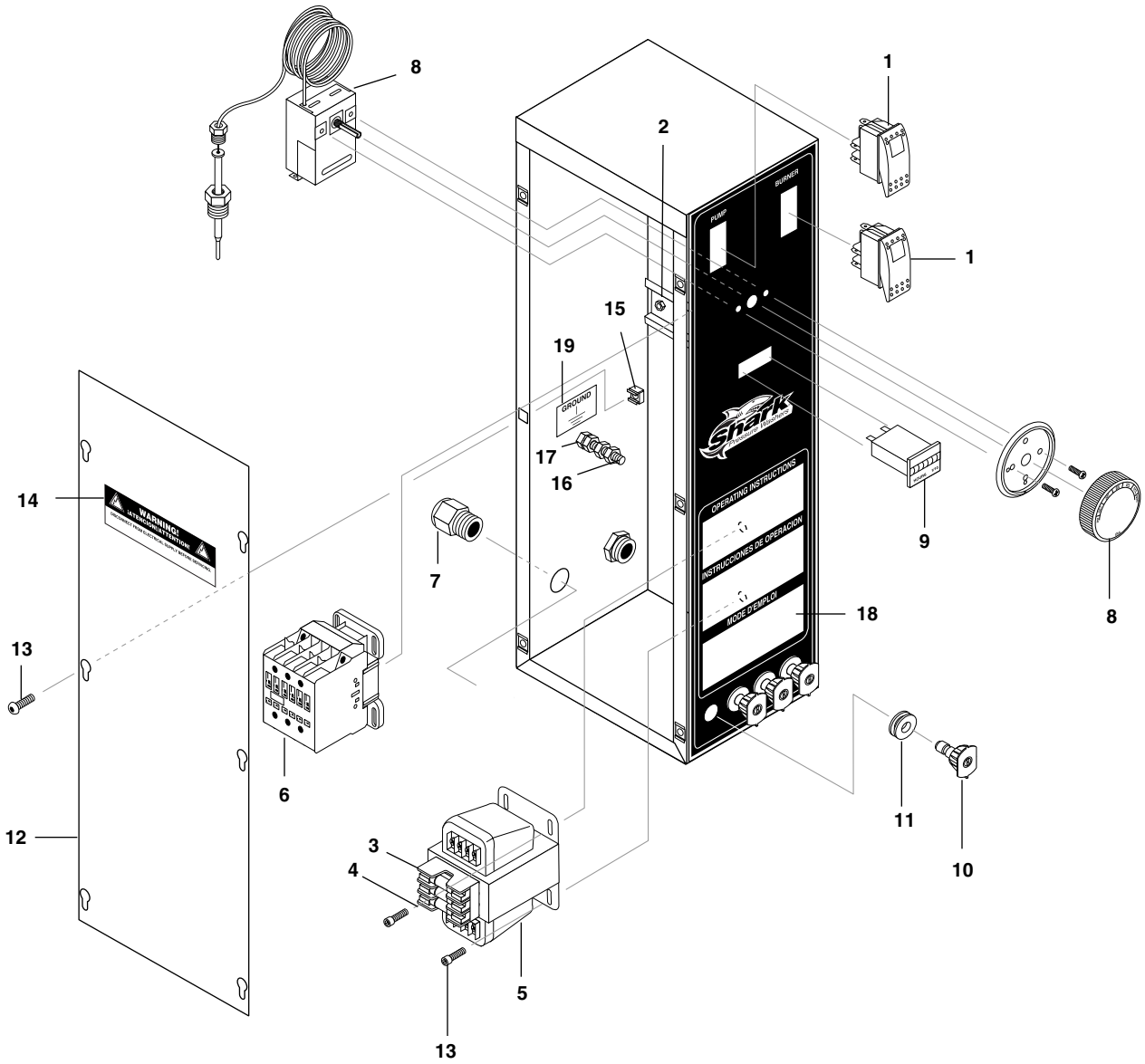
CONTROL PANEL
SENIOR SERIES



CONTROL PANEL PARTS LIST
SENIOR SERIES

ITEM	PART NO.	DESCRIPTION	QTY
1	6-020240	Switch, Rocker, Carling w/Green Lens	2
	6-020241	Rocker Switch, Red Lens (Auto Start)	1
2	6-021595	Din Rail, 35mm, Purch by Ea., Sold by In.	4
3	6-02294	Fuse, KTK-R1 600V (A&B Models)	2
4	6-022970	Fuse, Paper, Buss, FNM-1/2 (A&B Models)	1
5	6-60101	Transformer, 240/480-120V .050KVA/Glass (A & B Models)	1
6	6-4018	Contactor, CH, CE15HNS3AB-09	1
7	6-051591	Connector, 1/2", L/T 90°, Black	1
	6-051595	Strain Relief, STRT, L/T, LG	2
	6-05152	Strain Relief, STRT, L/T, Sm	2
8	4-05088	Thermostat, General 302 DGR	1
9	4-050822	Hour Meter (Optional)	1
10	4-12805500	Nozzle, SAQCMEG 0055, Red (402001, 402007)	1
	4-12805515	Nozzle, SAQCMEG 1505.5, Yellow (402001, 402007)	1
	4-12805525	Nozzle, SAQCMEG 2505.5, Green (402001, 402007)	1
	4-12805540	Nozzle, SAQCMEG 4005.5, White (402001, 402007)	1
11	2-0103	Grommet, Rubber, Nozzle Holder	4
12	95-07102201	Cover, Elec Box	1
13	90-1991	Screw, 10/32" x 1/2"	10
14	10-08018	Label, Disconnect Power Supply	1
15	90-2018	Nut, Cage, 10/32" x 16 ga.	6
16	90-1994	Screw, 10/32" x 1-1/4"	1
17	90-017	Nut, 10/32" Keps	4
18	11-0304	Label, Control Panel	1
19	11-1042	Label, Ground	1

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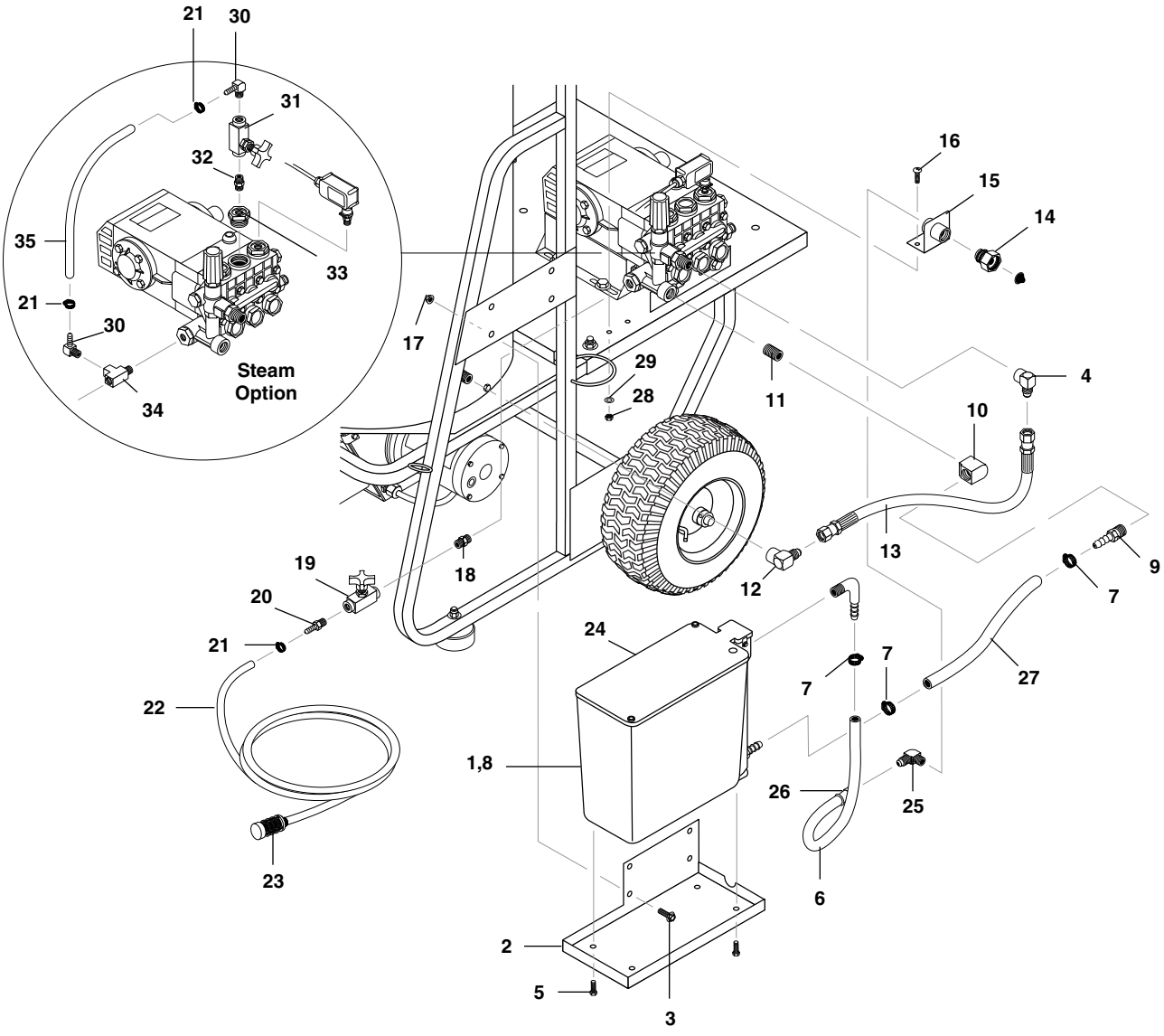
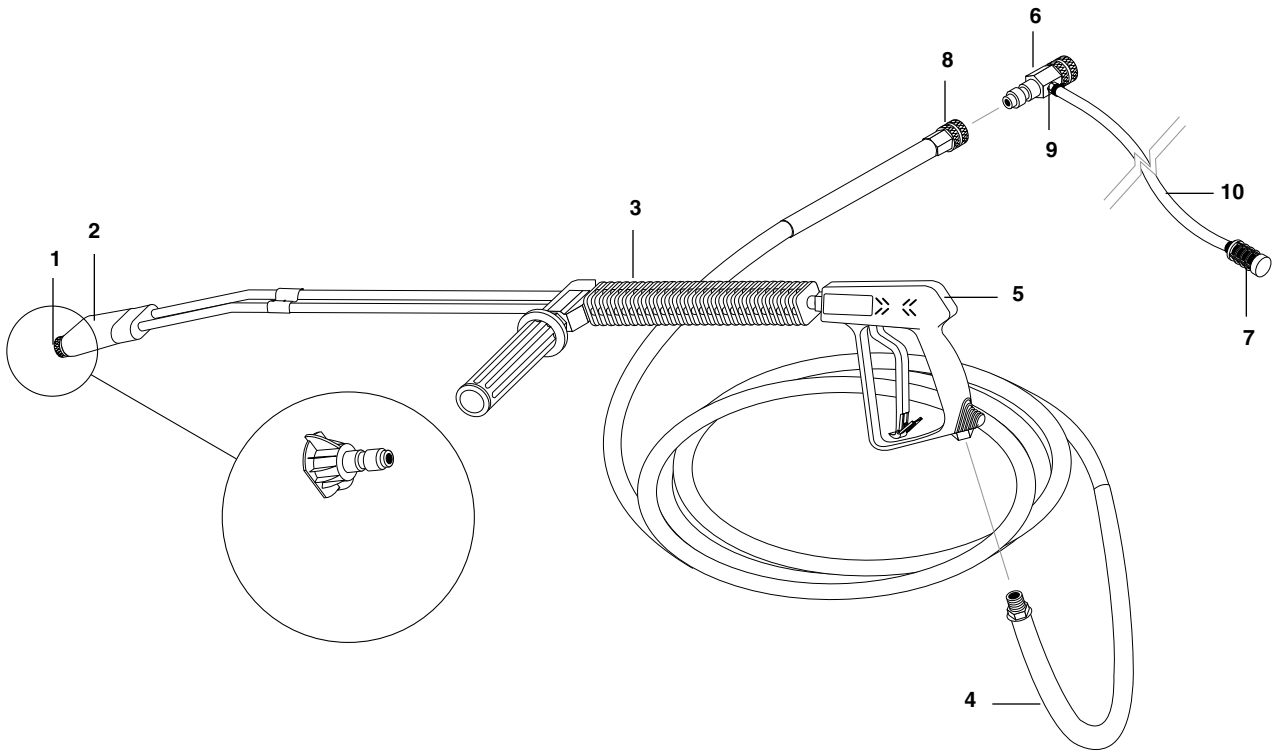
FLOAT TANK OPTION EXPLODED VIEW
SENIOR SERIES



FLOAT TANK OPTION PARTS LIST
SENIOR SERIES

ITEM	PART NO.	DESCRIPTION	QTY
1	2-011641	Tank, Float	1
2	95-07102213	Shelf, Float Tank	1
3	90-1996	Screw, 3/8" x 3/4" HH NC, Whiz	4
4	2-00601	Elbow, 1/2" JIC x 3/8" Fem, 90°	
5	90-19712	Screw, 5/16" x 1/2" Whiz Lock	4
6	4-02110000	Hose, 1/2", Push-On, per ft.	1.5 ft
7	2-9002	Clamp, Screw, #6	3
8	2-30122	▲ Valve, Float	1
9	2-10861	Hose Barb, 5/8" Barb x 1/2" ML Pipe	1
10	2-1020	Elbow, 1/2" Female, Brass	1
11	2-10061	Modified Close Nipple, 1/2" NPT, 5/16"	1
12	2-00602	Elbow, 1/2" x 1/2" Fem, 90°	1
13	4-02047722	Hose, 3/8" x 22", 2 Wire, Pressure Loop	1
14	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1
15	95-07162007	Hose Connection Bracket	1
16	90-1001	Bolt, 1/4" x 3/4", NC HH	2
17	90-20040	Nut, 3/8", Flange, Whiz Loc, NC	4
18	2-1003	Nipple, 1/4" Hex	1
19	2-3015	Valve, Flow Control	1
20	2-1085	Hose Barb, 1/4" Barb x 1/4" ML Pipe	1
21	2-9000	Clamp, Screw, #4	1
22	4-02080000	Tube, 1/4" x 1/2", Clear Vinyl, per ft.	6 ft
23	2-1905	Strainer, 1/4" Brass w/Check Valve	1
24	2-011642	Cover, Float Tank, Portotenica	1
25	2-1062	Elbow, 1/2" JIC x 1/2", 90°	1
26	2-1105	Swivel, 1/2" JIC Fem, Push-On	1
27	4-02110003	Hose, 5/8" Push-On, per ft	1 ft
28	90-2000	Nut, 1/4", ESNA, NC	2
29	90-4000	Washer, 1/4" Flat, SAE	4
30	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	2
31	2-30151	Valve, Flow Control w/Metering	1
32	2-0004	Nipple, 1/4" Hex Steel	1
33	15-070042532	Cap, Valve with 1/4" Gauge Port	1
34	2-1040	Tee, 1/4" Street	1
35	4-02100000	Hose, 1/4", Push-on	0.8 ft

HOSE AND SPRAY GUN ASSEMBLY



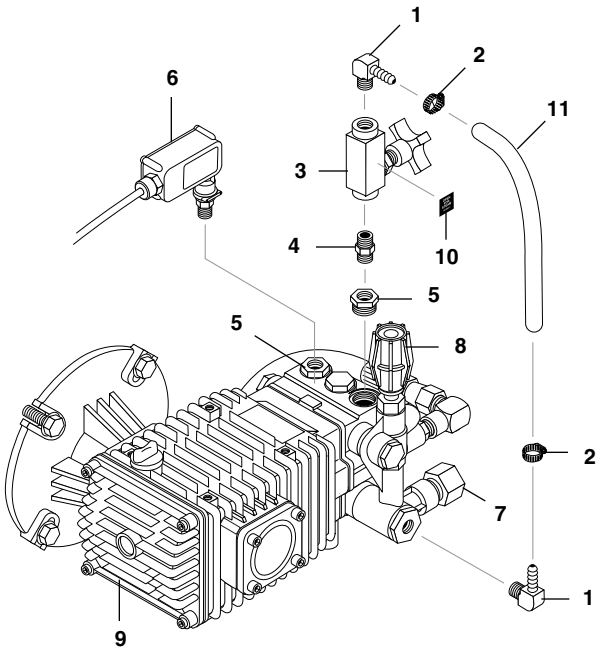
ITEM	PART NO.	DESCRIPTION	QTY
1	2-2001	Coupler, 1/4" Male	1
	2-0119	▲ Quick Coupler O-Ring, Small	1
2	4-06540	▲ Nozzle Only, 1/8" Soap	1
3	4-0111341A	Wand, Zinc, VP, w/Coupler	1
	83-SSVPKIT	▲ Repair Kit, Wand, SS Seat	1
4	4-02093450BC	Hose, 50' x 3/8", 100R1, Nomar w/Coupler	1
5	4-01246	Spray Gun, Shut-off, AP-1000	1
6	4-011184	Detergent Injector, Non Adjust #3	1

ITEM	PART NO.	DESCRIPTION	QTY
7	2-1904	Strainer, 1/4" Hose Barb	1
8	2-2002	Coupler, 3/8" Female	1
	2-0121	▲ Quick Coupler, O-Ring, Large	1
9	2-9000	Clamp, Screw #4	1
10	4-02090000	Tube, 1/4" x 1/2" Clear Vinyl /Ft.	5

▲ Not Shown

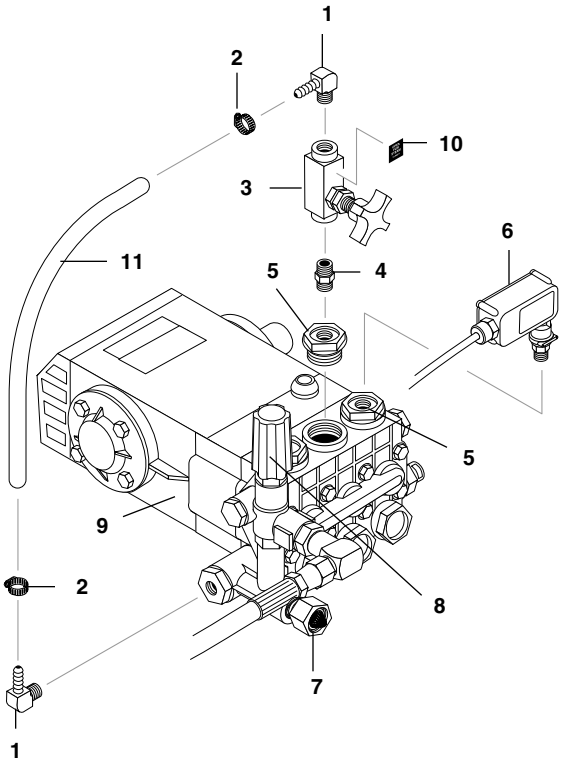
STEAM OPTION
JUNIOR SERIES

ITEM	PART NO.	DESCRIPTION	QTY
1	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	2
2	2-9000	Clamp, Screw, #4	2
3	2-30151	Valve, Flow Control w/Metering	1
4	2-0004	Nipple, 1/4" Hex Steel	1
5	15-070042532	Cap, Valve with 1/4" Gauge Port w/O-Ring	2
6	6-021720	Switch, Pressure N/O, 1/4" NPT SS	1
7	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1
8	See Pg. 15	Unloader	1
9	See Pg. 15	Pump	1
10	10-99011	Label, Open For Steam	1
11	4-02100000	Hose, 1/4" Push-On, per ft	1 ft



STEAM OPTION
SENIOR SERIES

ITEM	PART NO.	DESCRIPTION	QTY
1	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	2
2	2-9000	Clamp, Screw, #4	2
3	2-30151	Valve, Flow Control w/Metering	1
4	2-0004	Nipple, 1/4" Hex Steel	1
5	15-070042532	Cap, Valve with 1/4" Gauge Port w/O-Ring	2
6	6-021720	Switch, Pessure N/O, 1/4" NPT SS	1
7	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1
8	See Pg. 18	Unloader	1
9	See Pg. 18	Pump	1
10	10-99011	Label, Open For Steam	1
11	4-02100000	Hose, 1/4" Push-On, per ft	1 ft



BECKETT BURNER SPECIFICATIONS

Model #	Burner Assy #	Fuel Nozzle	Transformer	Burner Motor	Fuel Pump/ Solenoid/Cord	Fuel Solenoid Coil	Electrode
HPB-201101D	7-00027	7-01215	5-23581	7-21418	7-21844U	7-21755U	7-578727
HPB-201107D	7-00027	7-01215	5-23581	7-21418	7-21844U	7-21755U	7-578727
HPB-352001A	7-00090	7-0101	7-514021	7-21174	7-21844U	7-21755U	7-578727
HPB-352007A	7-00090	7-0101	7-514021	7-21174	7-21844U	7-21755U	7-578727
HPB-402001A	7-00090	7-01226	7-514021	7-21174	7-21844U	7-21755U	7-578727
HPB-402007A	7-00090	7-01226	7-514021	7-21174	7-21844U	7-21755U	7-578727

WAYNE BURNER SPECIFICATIONS

Model #	Burner Assy #	Fuel Nozzle	Transformer	Burner Motor	Fuel Pump	Fuel Solenoid	Electrode
HPB-352001A	7-00039	7-0124	7-21948001	7-20892	7-0009	7-0009611	7-13286
HPB-352007A	7-00039	7-0124	7-21948001	7-20892	7-0009	7-0009611	7-13286
HPB-402001A	7-00024	7-01251	7-21153	7-20554	7-0009	7-0009611	7-13286
HPB-402007A	7-00024	7-01251	7-21153	7-20554	7-0009	7-0009611	7-13286

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
BURNER WILL NOT LIGHT	Disconnected or short in electrical wiring	All wire contacts should be clean and tight. No breaks in wire.
	Burner motor thermal protector tripped	If tripped, check voltage, connections and extensions for cause. Check fuel pump shaft rotation for binding, causing motor to overheat.
	ON-OFF switch defective	Check continuity through burner switch.
	Heavy sooting on coil and burner, can cause interruption of air flow and shorting of electrodes	Clean as required.
	Improper electrode setting	Clean and test according to diagram in operator's manual.
	Fuel not reaching combustion chamber	Check fuel pump for proper flow. Check solenoid valve on machines with spray gun control for proper on-off flow switch.
	Fuel solenoid malfunction	Check by placing screwdriver inside coil then turn machine on, open spray gun and check for magnetic pull.
	Clogged burner nozzle	Replace.
	Water not turned on	Turn on water to activate burner pressure switch.
	Pressure switch malfunction	Remove, test for continuity and replace as needed.
MACHINE SMOKES	Improper fuel or water in fuel	Drain tank and replace contaminated fuel.
	Low fuel pressure	Adjust fuel pump pressure to specifications.
	Air leaks in fuel lines	Check fuel lines for leaks or air bubbles. Tighten or replace as needed.
	Plugged or dirty burner nozzle	Replace.
	Faulty burner nozzle spray pattern	Replace nozzle.
	Heavy accumulation of soot on coils and burner assembly	Remove coils and burner assembly. Clean thoroughly.
	Misaligned electrode	Realign electrodes to specifications.
	Fuel filter partially clogged	Replace as needed.
	Obstruction in smoke stack	Check for insulation blockage or other foreign objects.
	Soot build up on coils	Clean coils with soot remover.
	Lime build up in coils	Clean inside of coils using coil cleaner.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
LOW WATER TEMPERATURE	Improper fuel or water in fuel	Drain fuel tank and replace with proper fuel.
	Low fuel pressure	Increase fuel pressure.
	Weak fuel pump	Check fuel pump temperature. Replace pump if needed.
	Fuel filter partially clogged	Replace as needed.
	Soot build up on coils	Clean coils with soot remover.
	Lime build up on coils	Clean inside of coils usings coil cleaner.
	Improper burner nozzle	See Burner Specifications Page 30.
WATER TEMPERATURE TOO HOT	Incoming water to machine warm or hot	Lower incoming water temperature.
	Fuel pump pressure too high	Lower fuel pressure.
	Fuel pump defective	Replace fuel pump.
	Detergent line sucking air	Tighten all clamps. Check detergent line for holes.
	Defective high limit switch (thermostat)	Replace.
	Incorrect fuel nozzle size	See Burner Specifications Page 30.
	Insufficient water supplied	Check GPM to machine.
	Restricted water flow	Check nozzle for obstruction, proper size.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
LOW OPERATING PRESSURE	Faulty pressure gauge	Install new gauge.
	Insufficient water supply	Use larger garden hose; clean filter washer at water inlet.
	Old, worn or incorrect spray nozzle	Match nozzle number to machine and/or replace with new nozzle.
	Plumbing or hose leak	Check plumbing system for leaks. Retape leaks with teflon tape.
	Faulty or misadjusted unloader valve (where applicable)	Adjust unloader for proper pressure. Install repair kit when needed.
	Worn packing in pump	Install new packing kit.
	Fouled or dirty inlet or discharge valves in pump	Clean inlet or discharge valves.
	Worn inlet or discharge valves	Replace with valve kit.
DETERGENT NOT DRAWING	Air leak	Tighten all clamps. Check detergent lines for holes.
	Valve in the injector head may be blocked, dirty or damaged	Clean or replace valve in injector.
	Filler screen on detergent suction hose plugged	Clean or replace.
	Dried up detergent plugging metering valve	Disassemble and clean thoroughly.
	High viscosity of detergent	Dilute detergent to specifications.
	Hole in detergent line(s)	Repair hole.
	Low detergent level	Add detergent if needed.
	Discharge water temperature above 180ºF.	Lower discharge water temperature.
PUMP RUNNING NORMALLY BUT PRESSURE LOW ON INSTALLATION	Pump sucking air	Check water supply and possibility of air seepage.
	Valves sticking	Check and clean or replace if necessary.
	Unloader valve seat faulty	Check and replace if necessary.
	Nozzle incorrectly sized	Check and replace if necessary (See serial plate for proper size).
	Worn piston packing	Check and replace in necessary.
FLUCTUATING PRESSURE	Valves worn	Check and replace if necessary.
	Blockage in valve	Check and replace if necessary.
	Pump sucking air	Check water supply and air seepage at joints in suction line.
	Worn piston packing	Check and replace if necessary.
PUMP NOISY	Air in suction line	Check water supply and connections on suction line.
	Broken or weak inlet or discharge valve springs	Check and replace if necessary.
	Excessive matter in valves	Check and clean if necessary.
	Worn bearings	Check and replace if necessary.

PREVENTATIVE MAINTENANCE

This pressure washer was produced with the best available materials and quality craftsmanship. However, you as the owner have certain responsibilities for the correct care of the equipment. Attention to regular preventative maintenance procedures will assist in preserving the performance of your equipment. Contact your Shark Pressure Washers dealer for maintenance. Regular preventative maintenance will add many hours to the life of your pressure washer. Perform maintenance more often under severe conditions.

MAINTENANCE SCHEDULE		
Replace Fuel Lines		Annually
Pump Oil	Inspect	Daily inspect the oil level
	Change	After first 50 hours, then every 500 hours or annually
Clean Burner Filter		Monthly (More often if fuel quality is poor)
Remove Burner Soot		Annually
Burner Adjustment/Cleaning		Annually
Descale Coil		Annually (More often if required)
Replace High Pressure Nozzle		Every 6 months
Replace Quick Connects		Annually
Clean Water Screen/Filter		Weekly
Clean Float/Supply Tank		Every 6 months
Replace HP Hose		Annually if there is any sign of wear
Grease Motor		Every 10,000 hours
Replace Burner Nozzle		Annually

OIL CHANGE RECORD

Date Oil Changed Month/Day/Year	Estimated Operating Hours Since Last Oil Change

Date Oil Changed Month/Day/Year	Estimated Operating Hours Since Last Oil Change

HPB SERIES PRESSURE WASHER

WARRANTY

SHARK LIMITED NEW PRODUCT WARRANTY
PRESSURE WASHERS

WHAT THIS WARRANTY COVERS

All SHARK PRESSURE WASHERS are warranted by SHARK to the original purchaser to be free from defects in materials and workmanship under normal use, for the periods specified below. This Limited Warranty is subject to the exclusions shown below, is calculated from the date of the original purchase, and applies to the original components only. Any parts replaced under this warranty will assume the remainder of the part's warranty period. This warranty applies to the original purchaser and is not transferable.

LIMITED LIFETIME PARTS WARRANTY:

Components manufactured by SHARK, such as frames, handles, coil wraps, float tanks, and belt guards. All heating coils will have a three year warranty. Internal components on the oil-end of all pressure washer pumps will have a seven year warranty.

ONE YEAR PARTS WARRANTY:

All other components, excluding normal wear items as described below, will be warranted for one year on parts. Warranty on these parts will be for one year regardless of the duration of the original component manufacturer's part warranty.

WARRANTY PROVIDED BY OTHER MANUFACTURERS:

Motors, generators, and engines, which are warranted by their respective manufacturers, are serviced through these manufacturers' local authorized service centers. SHARK cannot provide warranty on these items.

WHAT THIS WARRANTY DOES NOT COVER

This warranty does not cover the following items:

1. Normal wear items, such as nozzles, guns, discharge hoses, wands, quick couplers, seals, filters, gaskets, O-rings, packings, pistons, pump valve assemblies, strainers, belts, brushes, rupture disks, fuses, pump protectors.
2. Damage or malfunctions resulting from accidents, abuse, modifications, alterations, incorrect installation, improper servicing, failure to follow manufacturer's maintenance instructions, or use of the equipment beyond its stated usage specifications as contained in the operator's manual.
3. Damage due to freezing, chemical deterioration, scale buildup, rust, corrosion, or thermal expansion.
4. Damage to components from fluctuations in electrical or water supply.
5. Normal maintenance service, including adjustments, fuel system cleaning, and clearing of obstructions.
6. Transportation to service center, shop labor charges, field labor charges, or freight damage.

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE

While not required for warranty service, we request that you register your SHARK pressure washer by returning the completed registration card. In order to obtain warranty service on items, you must return the product to an Authorized SHARK Dealer, freight prepaid, with proof of purchase, within the applicable warranty period. If the product is permanently installed, you must notify your Authorized SHARK Dealer of the defect. The Authorized Dealer will file a claim, which must subsequently verify the defect. In most cases, the part must be returned to SHARK freight prepaid with the claim. For warranty service on components warranted by other manufacturers, the Authorized Dealer can help you obtain warranty service through these manufacturers' local authorized service centers. If you are unable to resolve the warranty claim satisfactorily, write to SHARK at 4275 N.W. Pacific Rim Blvd., Camas, WA 98607, ATTN: Warranty Dept., detailing the nature of the defect, the name of the Authorized Dealer, and a copy of the purchase invoice.

LIMITATION OF LIABILITY

SHARK'S liability for special, incidental, or consequential damages is expressly disclaimed. In no event shall SHARK'S liability exceed the purchase price of the product in question. SHARK makes every effort to ensure that all illustrations and specifications are correct, however, these do not imply a warranty that the product is merchantable or fit for a particular purpose, or that the product will actually conform to the illustrations and specifications. **THE WARRANTY CONTAINED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.** SHARK does not authorize any other party, including authorized Dealers, to make any representation or promise on behalf of SHARK, or to modify the terms, conditions, or limitations in any way. It is the buyer's responsibility to ensure that the installation and use of SHARK products conforms to local codes. While SHARK attempts to assure that its products meet national codes, it cannot be responsible for how the customer chooses to use or install the product.

SHARK PRESSURE WASHERS
4275 N.W. Pacific Rim Blvd. • Camas, WA 98607 • USA • 1-800-771-1881

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